



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/607,039

06/27/2003

Tsutomu Horie

1095.1280

6413

21171

7590

09/06/2006

STAAS & HALSEY LLP

SUITE 700

1201 NEW YORK AVENUE, N.W.

WASHINGTON, DC 20005

EXAMINER

AKHAVANNIK, HADI

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,039	<b>Applicant(s)</b> HORIE ET AL.	
	<b>Examiner</b> Hadi Akhavannik	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/27/03</u> . | 6) <input type="checkbox"/> Other: ____  |

### **DETAILED ACTION**

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 3-4 and 8-9 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, claims 3 and 8 disclose the step of "enlarging a region associated with said pattern function". The Examiner notes that this step is not described in the specification nor is it described in the specification of Japanese Patent Application 2002-199595, which was incorporated by reference. Therefore, the specification is considered non-enabling. For examination purposes the examiner will read "enlarging a region" as meaning "extracting a region" because paragraph 32 of the specification discloses extracting the region of interest.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

Art Unit: 2624

said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shishido et al. (6865288, referred to as "Shishido" herein) in view of Chen et al. (6721695, referred to as "Chen" herein).

Regarding claim 1, Shishido discloses an inspection device that identifies defects on a subject of inspection including photomasks or products fabricated using photomasks (see column 6 lines 39-48, which discloses a pattern inspection device),

comprising: a reference data generator that generates reference data that is based on design data (column 7 lines 26-44 which discloses generating reference data to compare against the acquired image. The reference data is in the form of a CAD image).

an image acquiring unit that photographs the subject of the inspection and generates data to be inspected (column 7 line 45 to column 8 line 38 discloses an image acquiring method);

a comparator that compares said data to be inspected with said reference data and detects a defect (see figure 1, item 60 and column 8 line 39 to column 9 line 5 discloses an image comparator);

a reference data extractor that extracts a region of said reference data that corresponds to where said detected defect exists; a defect registration determinator that refers a standard to region and determines whether to register said defect; and a defect memory that records said defect for which registration has been determined. (Column 11 lines 41-67 discloses a defect judging means

Art Unit: 2624

that judges a defect against a predetermined standard to decide whether or not to register the occurrence as a defect or not. If the region is determined to be a defect then the defect is stored).

Shishido does not disclose using sensitivity codes.

Chen discloses including sensitivity class codes that are used to differentiate designated pattern functions by means of inspection sensitivity (see figure 3, column 3 line 59 to column 4 line 5, and column 4 lines 38-61, which disclose including sensitivity class codes that sets the threshold for each type of photomask);

an inspection sensitivity setter that allocates desired inspection sensitivities for said sensitivity class codes (see column 5 lines 10-24 discloses setting the inspection sensitivity for each class code);

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Shishido a sensitivity class setting means as taught by Chen. The reason for the combination is because it makes for a more robust system that will reduce the amount of false detects (see motivation by Chen in column 5 lines 21-25). Further, both inventions are from the same field of endeavor of defect detection.

Regarding claim 2, Chen discloses that the sensitivity class codes are expressed by a symbol (see Chen, figure 3, bottom row labeled "tech nodes", discloses multiple symbols the represent each sensitivity code).

Regarding claim 3, Shishido discloses defect registration determinator creates a defect determination range by extracting a region associated with said

Art Unit: 2624

pattern function, and based on overlap of said defect and said defect determination range, determines whether to register said defect (see Shishido column 11 lines 41-67 which discloses a determination means that checks to see if a defect exists by judging a reference area and the detection image against a predetermined threshold. In order to judge the reference area the system must first temporarily extract the region and store it in memory).

Regarding claim 4, the combination of Shihido and Chen disclose that the defect registration determinator detects which of said pattern functions said defect is associated with based on said overlap, and based on said inspection sensitivity that has been allocated to said detected pattern function, determines whether to register said defect (please see the rejection of claim 3 above and further see column 3 lines 21-33 and column 5 lines 25-47 which discloses using runablity charts to determine what pattern function said defect is associated with and using sensitivity codes to register the defect).

Regarding claim 5, Chen discloses that it is possible to set said sensitivity class codes for regions other than those associated with said pattern functions (column 4 lines 6-25 and figure 1 discloses placing multiple sensitivy codes on a test plate to check all regions of the photomask).

Regarding claim 6-10, these are the method claims of claim 1-5 and the rejection of claim 1-5 addresses all limitations of claim 6-10.

Art Unit: 2624

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hadi Akhavannik whose telephone number is 571-272-8622. The examiner can normally be reached on 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

9/1/06  
HA

  
JOSEPH MANCUSO  
SUPERVISORY PATENT EXAMINER